

Work Order ID 51016

July 30, 2009 8:29:02 AM

Page 1

Item ID: D120-638-011

Accept

Revision ID: E1

Item Name: Bearpaw

Start Date: 7/21/09 Start Qty: 2.00

Required Date: 7/21/09 Req'd Qty: 2.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan: *PS*

Date: *31-09-09* Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr					4			
D2435	Rev E1								

100

0.00



DC

Document Control

DOCUMENT CONTROL

Memo

Photocopy bluefile and create labels per PPP D120-638-011 CHG 002

8/5/08/19

120

0.00



Waterjet

FLOW CNC Waterjet

FLOW WATER JET

Memo

CUT BLANK AS PER FILE D2435

AB 9-8-12

(4)

130

0.00



HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

Note: (2) Bearpaw for (1) Kit
1-Inspect material for defects or damage prior to machining
2-Machine as per Folio FA789 and Dwg D2435 Identify as D2435
3-Deburr

8/5/08/12

4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 51016

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Page 2

Item ID: D120-638-011

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Revision ID: E1

Item Name: Bearpaw

Setup Start

Stop

Start Date: 7/21/09 Start Qty: 2.00

Required Date: 7/21/09 Req'd Qty: 2.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

Stop

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

QC2- Inspect parts off machine FAI/FAIB

0.00

88 09/08/13

4

0

QC

Memo

0.00

Quality Control

150

QC8- Inspect parts - second check

0.00

88 09/08/14

4

0

QC

Memo

0.00

Quality Control

160

Pick Kit

0.00

9/8/17 (24) 50

Packaging

Memo

0.00

Packaging

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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July 30, 2009 8:29:02 AM



Page 3

Item ID: D120-638-011

Accept



Setup Start



Revision ID: E1

Stop



Item Name: Bearpaw

Start Date: 7/21/09

Start Qty: 2.00



Cust Item ID:

Required Date: 7/21/09

Req'd Qty: 2.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

170

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

180

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD120-638-011

Location:

190

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

PC 9/4/19 (2)

09/08/25

u 09.08.24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

July 30, 2009 8:29:01 AM

Work Order ID: 51016

Parent Item: D120-638-011RevE1

Parent Item Name: Bearpaw



Comments:

Start Date: 7/21/09

Required Date: 7/21/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MUHMWB10  UHMW 1" Black		Purchased	No			120	sf	442.1100	6.7377 ✓ 			

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

MAT

320

110186

320

Main Warehouse

ST

122.11

108762

18

109186

5

110520

8

110721

25

111354

66.11

112186

112186

HS 9-8-11

blank: 19.500" x 16.00" x 1.00" thick (+0.030/-0.000)

per DSK086-3

D2182B050RevC

Manufactured

No

160

Each

0.0000

8.0000



Clamp Cushion Black



1345400

9/8/17 @280

4x 5"

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Work Order ID: 51016

Parent Item: D120-638-011RevE1

Parent Item Name: Bearpaw

Comments:

Start Date: 7/21/09

Required Date: 7/21/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2274RevF		Manufactured	No			160	Each	672.0000	16.0000			



Radius Block

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST

672

22494

0

23174

0

36624

17

38173

6

42099

34

43838

62

47796

383

50227

170

47796

9/8/11 SQ

D2438RevC



Clamp

Manufactured No

160

Each

143.0000

8.0000



Warehouse

Location

Loc Qty

Loc Code

Main Warehouse

ST

143

46113

143

46113

9/8/11 SQ

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Work Order ID: 51016

Parent Item: D120-638-011RevE1

Parent Item Name: Bearpaw

Comments:

Start Date: 7/21/09

Required Date: 7/21/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2529RevE		Manufactured	No			160	Each	441.0000	16.0000			



Washer

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST

441

45388

441

45388 30

AN4-15A

Purchased

No

160

Each

1,060.000

16.0000



Bolt

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST

1060

107737

8

108077

1

108868

7

109148

18

110399

26

111295

1000

111295

9/8/17 (x2) 50

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Picklist Print

July 30, 2009 8:29:01 AM

Page 4

Work Order ID: 51016

Parent Item: D120-638-011RevE1

Parent Item Name: Bearpaw


Comments:

Start Date: 7/21/09

Required Date: 7/21/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN960JD416  Washer	fs	Purchased	No			160	Each	11,912.00	16.0000			

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	11912	
102929	2	
105906	4	
107321	23	
107939	114	
108161	553	
108827	31	
109249	69	
110523	340	
111279	776	
111916	5000	
112314	5000	
16941	0	

11912

9/8/17
(2x)
SV

July 30, 2009 8:29:01 AM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Picklist Print

July 30, 2009 8:29:01 AM

Page 5

Work Order ID: 51016

Parent Item: D120-638-011RevE1

Parent Item Name: Bearpaw

Comments:

Start Date: 7/21/09

Required Date: 7/21/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS21042L4		Purchased	No			160	Each	10,282.00	16.0000			



Nut

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST	10398
107499	5
110507	2232
111827	6000
112314	2000
15924	0
8182	161

110507

9/8/17
2
8

July 30, 2009 8:29:01 AM

Shop Packet Print

Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	
Description: Bearpaw		Part Number:	D2435
Inspection Dwg: D2435 Rev: E1		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article**
☐ **Prototype**

Inspection Sheet Drawing Dimension		Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
A	0.063 x 45°	+0.030/-0.010	.063	✓			
B	5.500	+/-0.030	5.506	✓			
C	0.200	+/-0.030	.218	✓			
D	R0.250	+/-0.030	.250	✓			
E	0.250	+/-0.010	.258	✓			
F	0.625	+/-0.030	.635	✓			
G	0.25 x 45°	+/-0.030	.250	✓			
H	0.375	+/-0.010	.381	✓			
I	19.000	+/-0.030	19.000	✓			
J	0.950	+0.030/-0.010	.962	✓			
K	Ø0.260	+0.005/-0.000	.260	✓			
L	Ø0.930	+/-0.030	.925	✓			
M	0.30	+0.030/-0.000	.308	✓			
N	0.375	+/-0.030	.378	✓			
O	7.375	+/-0.030	7.375	✓			
P	4.250	+/-0.010	4.250	✓			
Q	2.000	+/-0.030	2.000	✓			
R	9.000	+/-0.010	9.000	✓			
S	15.750	+/-0.030	15.750	✓			

Measured by: <i>BS</i>	Audited by: <i>[Signature]</i>	Prototype Approval:	N/A
Date: 09/08/13	Date: 09/08/14	Date:	

Rev	Date	Change	Revised by	Approved
A	03.09.22	New Issue P/O K10007	KJ/RF	<i>[Signature]</i>

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT: **DART**
WITH: **DART**
WORK ORDER
NO. 31016

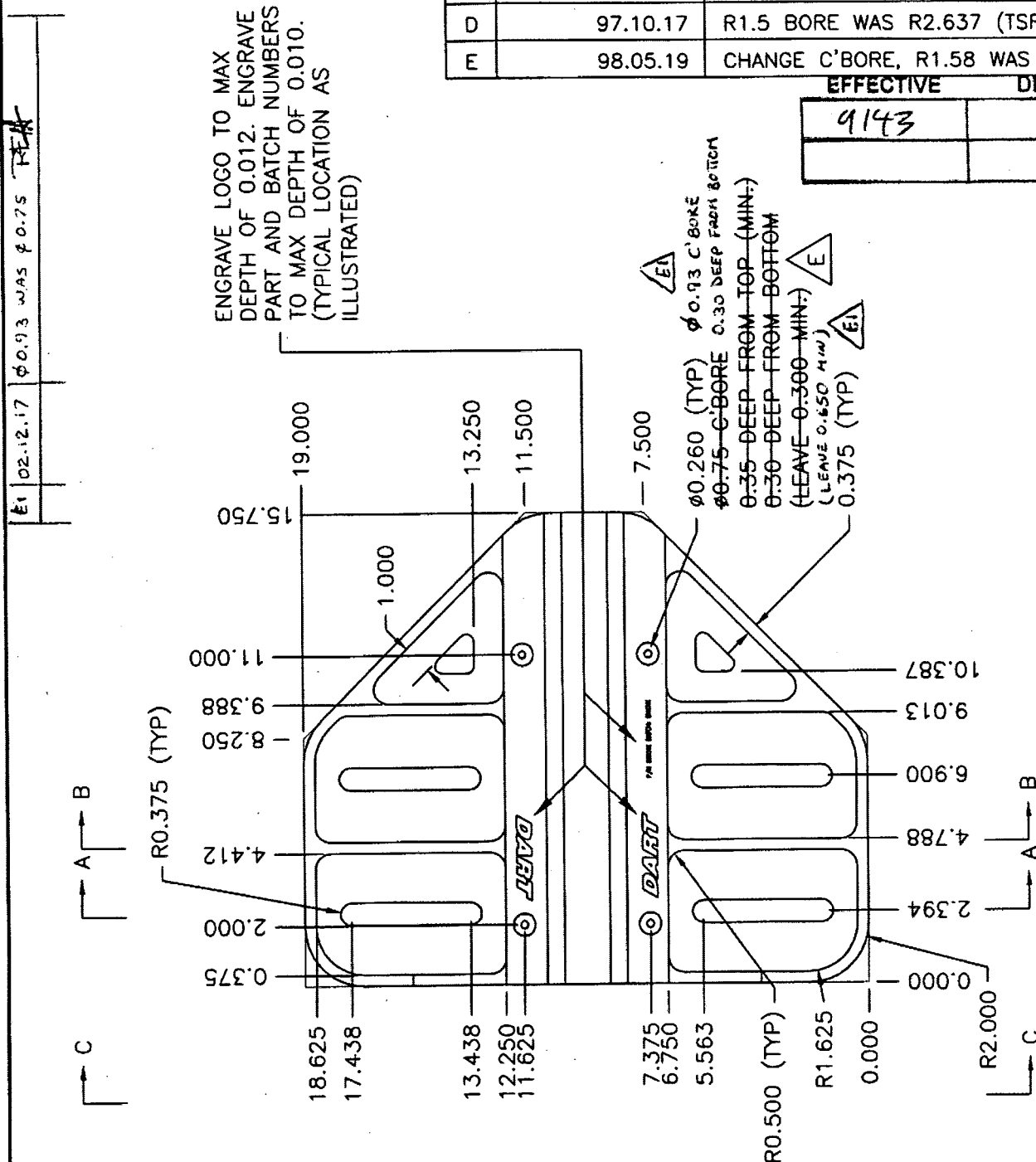


DESIGN KE	DRAWN BY KE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED KE	APPROVED KE	DRAWING NO. D2435	REV. E SHEET 1 OF 2
DATE 98.05.19	TITLE BEARPAW	SCALE 1:5	
A	96.01.24	NEW ISSUE	
B	96.03.26	CHANGE BORE AND C'BORE DEPTH	
C	97.05.07	CHANNEL & C'BORE DEPTH CHANGED	
D	97.10.17	R1.5 BORE WAS R2.637 (TSR A469)	
E	98.05.19	CHANGE C'BORE, R1.58 WAS R1.50	

RELEASED
98.06.17 KE

EFFECTIVE DEOS

9143	



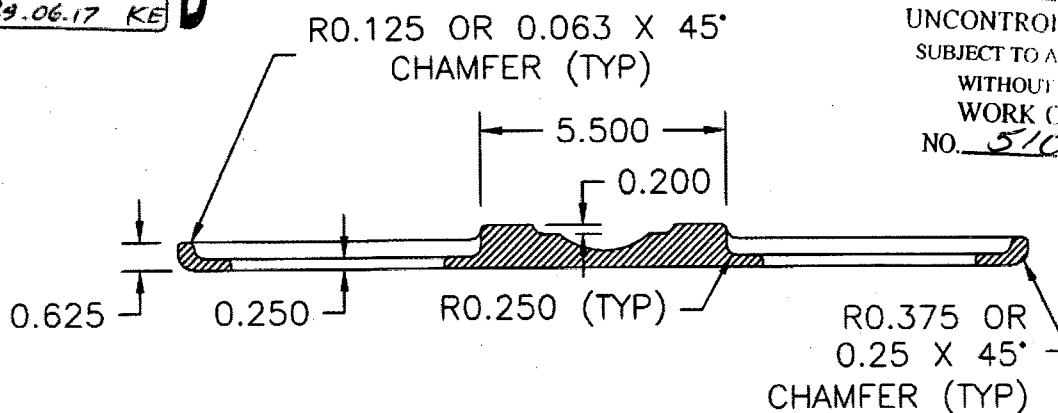
MATERIAL: UHMW BLACK PER SPEC CONTROL DRAWING D2689
1.00 THICK (MACHINE TO 0.950)



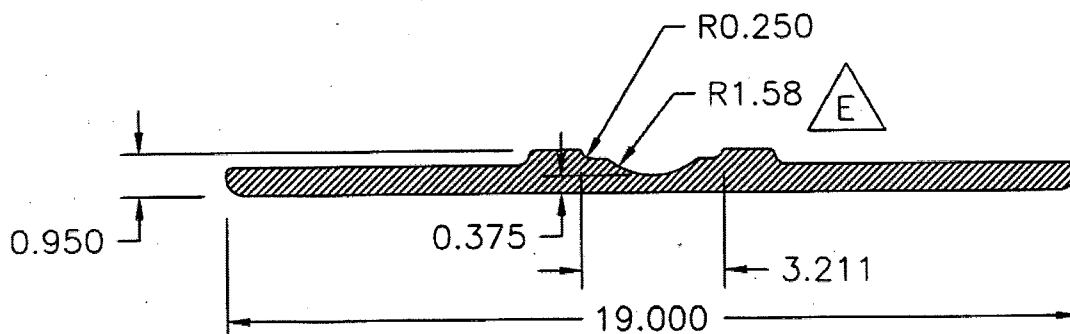
DESIGN <i>KE</i>	DRAWN BY <i>KE</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>MB</i>	APPROVED <i>KE</i>	DRAWING NO. D2435	REV. E SHEET 2 OF 2
DATE 98.05.19		TITLE BEARPAW	SCALE 1:4

RELEASED
99.06.17 KE

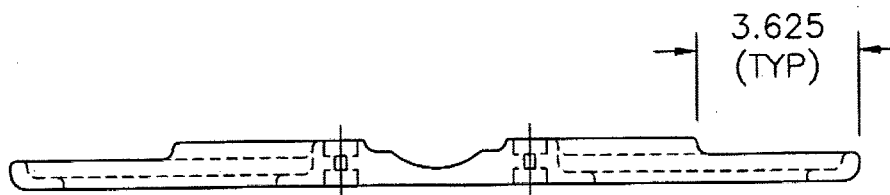
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. *51016 B*



SECTION A-A



SECTION B-B



SECTION C-C

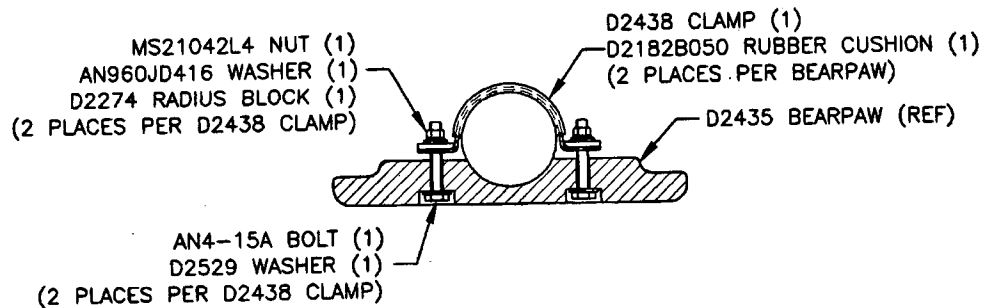


Figure 2 – Bearpaw Installation

4. WEIGHT AND BALANCE

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D120-638-011 Bearpaw	8.4 lb 3.82 kg	0.0 in 0.0 m	0.0 in-lb 0.0 m-kg	178.7 in 4.54 m	1501.1 in-lb 17.34 m-kg

5. PARTS LIST

Qty	Part Number	Description
X	D120-638-011	BEARPAW INSTALLATION
4	D2182B050	Rubber Cushion
8	D2274	Radius Block
8	D2529	Washer
2	D2435	Bearpaw
4	D2438	Clamp
8	AN4-15A	Bolt
8	AN960JD416	Washers
8	MS21042L4	Nut (or MS21042-4)

51014